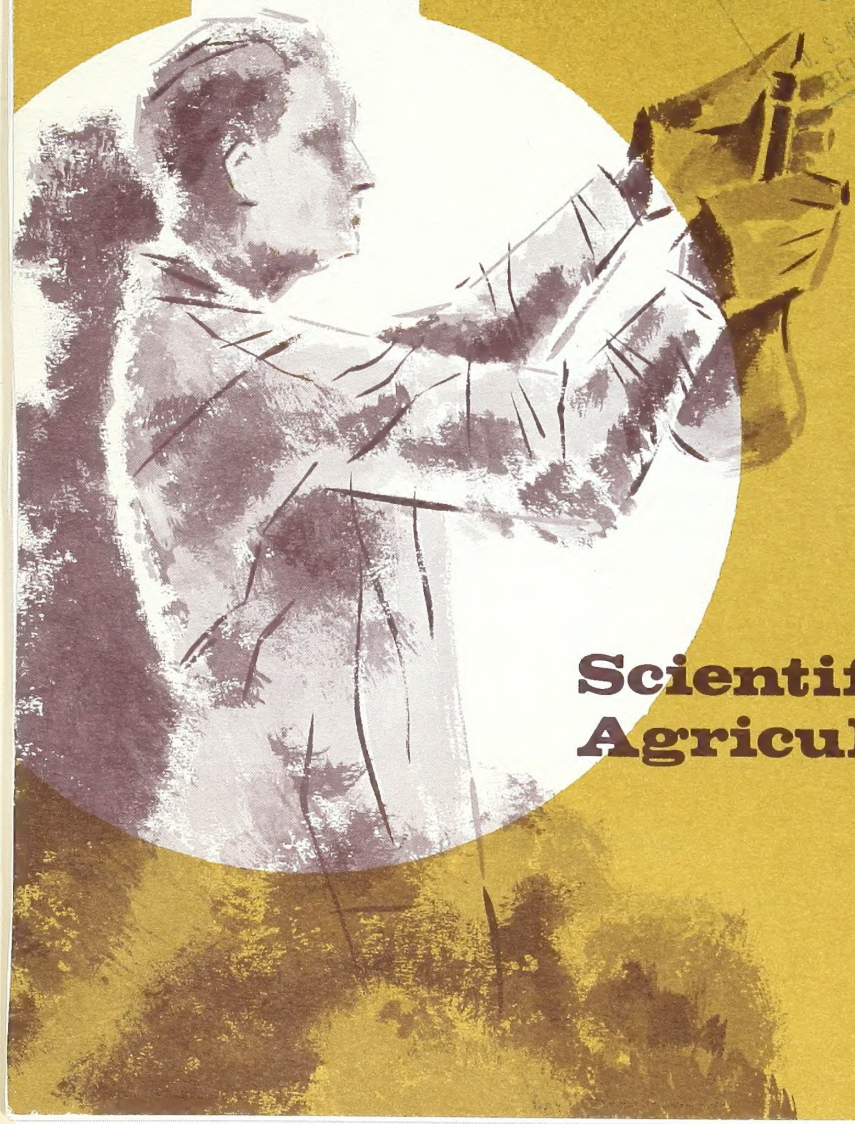

Scientific Careers in the Agricultural Research Service

Miscellaneous Publication No. 798
UNITED STATES DEPARTMENT OF AGRICULTURE

In this publication you will find—

A brief description of the Agricultural Research Service—what it is, what it does;

Descriptions of some of its accomplishments and objectives; and

Information about the opportunities for scientific careers that exist within the organization, and about the advantages of employment in the Federal civil service.

FOREWORD

If you are an agricultural science student, I suggest that you read this publication carefully. The information is of special interest to graduate students, but I think it will also be useful to undergraduate students and to other professionally trained people who may be interested in the possibility of employment in the Agricultural Research Service.

I believe that after reading it you will agree that scientists in the Agricultural Research Service have an opportunity to do interesting, challenging, and important work, and to build successful, rewarding careers. In considering the advantages of Federal employment, do not overlook the satisfaction to be derived from the knowledge that your work contributes not only to the advancement of agriculture but also to the welfare of the entire Nation.

Byron T. Shaw

Administrator, Agricultural Research Service

CONTENTS

	Page
Description of Programs	4
Pioneering Research	18
Research Environment and Facilities	20
Some Results of ARS Research	22
Looking Ahead in Research	25
Employment Opportunities	25
Salary and Advancement	27
Professional Growth and Recognition	31
Hours of Duty	32
Federal Employees Group Health Insurance	32
Leave Privileges	32
Medical and Compensation Benefits	33
Group Life Insurance	33
Retirement System	33
Where To Get Additional Information	35

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THE Agricultural Research Service (hereafter referred to as ARS) is an agency of the U.S. Department of Agriculture. It conducts fundamental, applied, and developmental research in the production and utilization of agricultural products. It also administers control and regulatory programs closely related to this research. These programs include enforcement of plant and animal quarantines, inspection of meat, and control and eradication of diseases and insect pests of animals and plants. In addition, ARS administers the Federal statutes granting funds for the support of agricultural research by experiment stations of the various States and Territories.

Scientific Careers in the Agricultural Research Service

**Prepared by Personnel Division,
Agricultural Research Service**

The agency's work is carried on in Washington, D.C., in the nearby Agricultural Research Center in Beltsville, Md., in more than 500 other locations in the United States and its Territories and possessions, and in more than a dozen foreign countries. Most of the work is cooperative with State agricultural experiment stations, State departments of agriculture, and other organizations.

More than 15,000 people are employed by ARS on a full-time basis. Nearly 6,000 of these are professional employees. Close to 3,000 of these professional employees, representing about 35 scientific specialities, are engaged in research activities. Most of the employees are located in field stations, experimental farms, and laboratories throughout the United States.

ARS is the largest constituent agency of the Department of Agriculture and probably the largest civilian research agency in the world. It was formed by the consolidation of various bureaus and parts of agencies during a reorganization of the Department of Agriculture late in 1953.

A nation is as strong as its agriculture, and *agriculture begins with science*. Everyone knows something of the part science has played in this country's spectacular gain in production capacity. *Science begins with scientists*. It's apparent that the future of agriculture—and, in turn, the future of our country—depends in large measure on agricultural science and scientists. We must see that our total scientific effort maintains our world leadership in agriculture. This means that the necessary scientific staff must be available for this effort. It also means directing the energies of this staff in a manner that will accomplish the following agricultural objectives: Protect gains already achieved, improve the balance of agriculture, and guarantee abundance for future Americans.

It's a big assignment—and ARS has a vital role in this total agricultural scientific effort. Accordingly, it is interested in attracting well-qualified scientists of real ability in diverse professional specialties who can make worthwhile contributions toward the attainment of these objectives. Excellent opportunities for successful careers under the Civil Service merit system are available to such persons in ARS. In this scientific organization, you will find progressive policies, sound personnel practices, and a continuing interest in you as a scientist and an individual. You will derive great personal satisfaction from doing challenging and important work that is beneficial to the general public. You will have maximum opportunity to make full use of your scientific training and professional talents, and to contribute new accomplishments in your chosen field.

DESCRIPTION OF PROGRAMS

The research and regulatory activities of ARS are conducted by 21 program divisions, which are grouped into 6 major areas. Following are the names of the divisions assigned to each of these areas, descriptions of their work, and references to the scientific specialties utilized:

Farm Research

Program activities in the area of farm research are carried out at more than 200 locations in all parts of the country.

AGRICULTURAL ENGINEERING RESEARCH DIVISION. Fundamental and applied research is conducted on the engineering phases of investigations concerned with (*a*) harvesting and processing of crops; (*b*) tillage, related soil mechanics, and crop growing; (*c*) livestock production and farm structures; and (*d*) applications of electric energy to agriculture. There are about 115 professional research employees in this Division. Most of them are agricultural engineers.

Agricultural engineers use this machine to test the traction of farm-implement tires. N-28712

Dots show locations where ARS scientists conduct farm research.

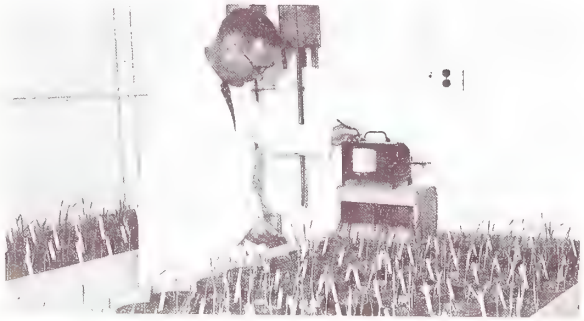
ANIMAL DISEASE AND PARASITE RESEARCH DIVISION. Fundamental and applied research is conducted on diseases and parasites that affect domestic animals, poultry, and fur-bearing animals raised in captivity. This Division seeks to learn how infectious diseases and harmful parasites are transmitted. It develops and improves methods of diagnosis, control, prevention, and eradication of diseases and conditions caused by bacteria, viruses, rickettsiae, fungi, and parasites. This work requires the services of more than 140 professional research employees in a wide range of sciences, including veterinary medicine, parasitology, bacteriology, chemistry, and physics.

ANIMAL HUSBANDRY RESEARCH DIVISION. Fundamental and applied research is conducted for the purpose of increasing the efficiency and economy of livestock production. The extensive program of research to develop new and improved methods of breeding, feeding, and management of beef, dual-purpose, and dairy cattle, swine, sheep, goats, and poultry includes studies to identify or develop more efficient types and strains of these classes of livestock, and studies of methods to improve the quality of livestock products such as meat, milk, eggs, and wool. In addition, research is conducted with domestic fur animals to develop improved methods of breeding, feeding, and management of domestic rabbits for meat and fur, and to improve the production of fur by minks and marten raised in captivity. The subject-matter specialists engaged in these activities consist of approximately 160 professional research workers and include animal husbandmen, dairy husbandmen, poultry husbandmen, animal and poultry geneticists, animal and poultry nutritionists, animal and poultry physiologists, biochemists, chemists, bacteriologists, animal fiber technologists, and food technologists.

CROPS RESEARCH DIVISION. Plant scientists of this Division conduct fundamental and applied research on both field and horticultural plants to seek new and improved varieties of cereals, grasses, fruits, vegetables, nuts, tobacco, and plants for sugar, forage, fiber, oil, and drugs that will meet the world's changing needs. One important requirement of a new variety is resistance to the diseases and insects that from time to time threaten to destroy an entire industry. Other requirements are better nutritive quality, palatability, high yield, and good storage and shipping qualities. These scientists strive for multiple desirable characteristics in one variety, such as high yield, high quality, and resistance to many diseases and insects. In greenhouses and special chambers equipped to provide light or darkness at will, scientists carry out basic research on the effect of length of day and night on the growth and flowering of plants. Physiological studies on nutrition, plant hormones, and behavior of plants in response to environmental conditions are conducted in greenhouses and controlled-growth

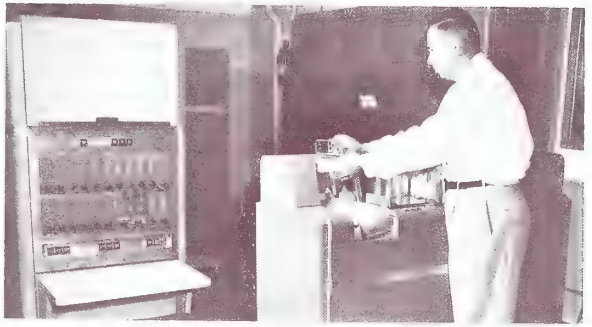
Administration Building, Plant Industry Station, Beltsville, Md. Several of the farm-research divisions have their headquarters at the Station. N-31900

Dairy husbandman measuring cow's metabolism with specially designed equipment. N-25298



Plant scientist studying the effects of light on plant growth and diseases. BN-6473

To learn how the internal organs of a house fly have been affected by an insecticide, an insect physiologist dissects the fly under a binocular microscope. N-24351



By means of a data computer, a research scientist speeds the assembly of information for analysis. BN-7229x

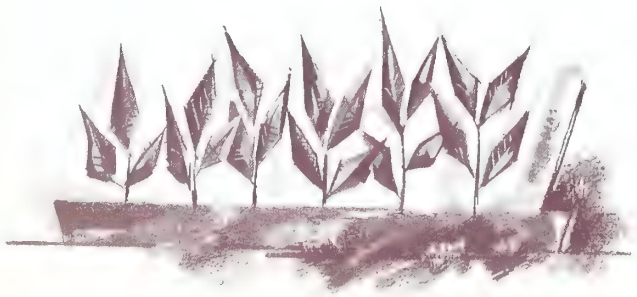
Using a spectrophotometer and reading scale, a soil scientist makes an analysis of a soil sample. N-31859

The development of improved methods of control, diagnosis, and eradication of animal diseases and parasites is one of the important areas in which ARS performs research. N-14409

chambers; the purpose is to provide a basis for understanding the principles involved and for developing field and handling practices. Fundamental studies on chemical control of weeds also are a part of the basic physiological research conducted in laboratories and greenhouses. As basic studies develop, the principles are carried to field testing for improvement of cultural practices. This work includes control of field diseases, nematodes, nutritional differences, and quality aspects related to field handling. The program activities of this Division require the services of more than 700 professional research workers in a wide variety of scientific disciplines, including agronomy, botany, chemistry, plant genetics, horticulture, nematology, plant pathology, and plant physiology.

ENTOMOLOGY RESEARCH DIVISION. Fundamental and applied research is conducted on the classification, anatomy, physiology, distribution, and habits of insects that affect human welfare, including methods of controlling harmful species and methods of helping beneficial ones. This Division seeks basic knowledge about insects (such as how and where they live, how they develop, what causes them to become scarce or abundant at certain times, and their relation to other forms of life) for use in the constant struggle against those that are harmful. It conducts studies of insect pests to determine how they can be most efficiently controlled. Many insects produce useful products, pollinate useful plants, or attack crop pests. Wild and domesticated bees, our most important pollinators, are studied to learn how they may be used most effectively or to determine the conditions they require to become abundant in the vicinity of crops. Explorers search all over the world for insects that attack insect pests or feed on noxious weeds. After such insects are found and carefully tested to be sure they will not attack beneficial plants or insects, they may be introduced to aid American agriculture. There are about 350 professional research employees in this Division. The majority of them are entomologists, but several other scientific disciplines are utilized, such as chemistry, bacteriology, and physics.

Soil scientists use radioactive tracers to follow nutrient translocations in plants.



SOIL AND WATER CONSERVATION RESEARCH DIVISION. Fundamental and applied research is conducted to develop improved systems of soil and water management and conservation that will permit efficient, sustained, and profitable use of the Nation's soil and water resources. Studies are conducted in soil chemistry and physics, microscopic plant and animal life in the soil, methods of cultivation, irrigation and crop rotation, factors involved in producing crops of high nutritive value, and soil-water-plant relationships that may affect management of different soils. Soil and water management and conservation research is also carried on in such fields as watershed hydrology, stream and reservoir sedimentation, runoff, salinity control, and engineering aspects of drainage and irrigation. Fertilizer investigations cover development of new types of fertilizers; more effective ways of manufacturing and using them; field, greenhouse, and laboratory tests for evaluating efficiency of fertilizers; and studies of how plants use applied materials. This Division employs some 350 professional research workers, most of whom are soil scientists, agricultural engineers, hydraulic engineers, irrigation engineers, chemists, and physicists.

Utilization Research and Development

There are four utilization research and development divisions, one for each of the country's major production areas. They are the Eastern Division, at Wyndmoor (near Philadelphia), Pa.; the Northern Division, at Peoria, Ill.; the Southern Division, at New Orleans, La.; and the Western Division, at Albany (near San Francisco), Calif.

The activities of these divisions are directed toward the discovery of new or improved methods of utilizing agricultural commodities of all types. This is accomplished through research in the field of chemistry and the related physical, biological, and engineering sciences. It is designed to develop new and improved products from agricultural commodities, to find better commercial methods for processing such products, and to increase the industrial utilization of agricultural products and byproducts as raw materials. The ultimate objective of this work is to enable the farmer to get more income from his crops, livestock, and poultry. Industry also benefits from it as new, or improved, or more stable products are developed that can be made from agricultural raw materials; and the consumer benefits as these products are made available at reasonable costs.

The four utilization research and development divisions employ a total of about 800 professional research workers. While the majority of these are chemists, scientists are also required in other disciplines, such as physics, bacteriology, chemical engineering, mechanical engineering, and various types of technology. Utilization research translated into investigations by these scientists represents considerable fundamental as well as applied research in such major areas as: Organic chemistry of natural products; composition, structure, and properties; physical measurements of natural substances; isolation and characterization studies; synthetic organic conversions; process and product development; pilot-plant scale development of chemical and fermentation processes; and mechanical design and engineering estimates.

Each division engages in research on assigned commodities of major significance to the agricultural economy. Because of the widespread economic importance of some of the commodities, research on them may be conducted by more than one division, especially if they present problems peculiar to different geographical areas. The following shows the research fields assigned to each division:

EASTERN DIVISION. Eastern deciduous fruits; eastern vegetables; meat; dairy products; animal fats; hides, tanning materials, and leather; honey; maple products; tobacco; wool byproducts; plant precursors of cortisone; biologically active plant compounds; and allergens of agricultural products.

NORTHERN DIVISION. Wheat, corn, and other grains grown in the North Central States; soybeans, flaxseed, and other oilseeds grown in the North Central States; forages; new crops; and agricultural residues.

SOUTHERN DIVISION. Cotton fiber and cottonseed; tung fruit; peanuts; rice; sugarcane; pine gum; citrus fruits; and sweetpotatoes, cucumbers, and other southern vegetables.

WESTERN DIVISION. Western fruits and tree nuts; western vegetables; wheat and rice; wool and mohair; poultry and eggs; sugar beets; and alfalfa and other forage crops.

Institute of Home Economics

Scientists of the Institute of Home Economics conduct fundamental and applied research to develop new knowledge about nutrition; better consumer use of food, fiber, and other products; and efficient household management, in order to help families achieve better living in more satisfying homes. The combined skills of home economists (specialists in nutrition, experimental cookery, textiles, clothing, housing, household equipment, family economics, and home management), and chemists, physicists, physiologists, bacteriologists, architects, and statisticians are required to carry out the research programs of the Institute's three divisions.

CLOTHING AND HOUSING RESEARCH DIVISION. Work of this Division includes studies into the quality and utility of fabrics, clothing, and household textile articles for different household purposes. The Division explores the kinds and characteristics of housing and household equipment needed to meet family requirements for efficient housekeeping and comfortable living. It develops information basic to wise planning, improved use and care of clothing, household textiles, the house, its equipment, and its facilities. The laboratories of this Division are located at Beltsville, Md., where some 30 professional workers conduct its research activities.

HOUSEHOLD ECONOMICS RESEARCH DIVISION. This Division prepares tables on composition and nutritive value of foods, levels of food consumption, and nutritive value and economy of customary diets of various population groups. Research is also conducted on patterns of rural family expenditures, household production for family use, and economic problems of household management, including the effect of the economic situation on family living. The Division applies economic and other scientific information to develop recommendations for effective and economical use of food and other family resources for higher levels of living. It cooperates with other Federal and State agencies in the coordination of nutrition programs. The work of this Division is carried out in Washington, D.C., and requires the services of about 30 professional employees.

HUMAN NUTRITION RESEARCH DIVISION. This Division investigates human nutritional requirements and the body's response to nutrients, foods, and diets when eaten in varying amounts and proportions; food analysis for nutrients; cooking quality and utility of foods and factors that affect these; and the development of improved procedures and conditions for household processing and storage of foods. Research on home food preparation develops new and improved cooking methods for use in homes and institutions to preserve palatability and nutritive values and to make use of abundant or new food on the market. About 70 professional research employees are engaged in the work of this Division in its laboratories at Beltsville, Md.

To add to our knowledge of food composition, these scientists determine by ether extraction the amount of fat in raw foods or in foods as prepared for eating.

N-33251

Experiment Stations Divisions

STATE EXPERIMENT STATIONS DIVISION. This Division is responsible for the administration of Federal-grant funds for research made available to the State, Territorial, and Puerto Rican agricultural experiment stations. Leadership and assistance are provided through a group of technical specialists, representing all major fields of agriculture, in the development and conduct of agricultural research by the State agricultural experiment stations, including experiment station-Department cooperative research programs and participation in coordination of research programs between States and by major agricultural regions. There are about 40 professional employees in this Division, all of whom have headquarters in Washington, D.C. The staff consists of specialists who have had extensive professional experience in the agricultural sciences.

Technical workers at Federal experiment station, Mayaguez, P.R., testing effectiveness of micro-spraying banana plants for disease control. BN-7744x

TERRITORIAL EXPERIMENT STATIONS DIVISION. This Division conducts interesting programs involving both tropical and subarctic research. In Puerto Rico the Federal experiment station has a comprehensive program of basic research on the potentialities and management of tropical and other plants. In Alaska a joint research program with the University of Alaska Experiment Station includes specialized research under subarctic conditions in the fields of agricultural engineering, agronomy, soils, horticulture, entomology, animal and dairy husbandry, and plant pathology.

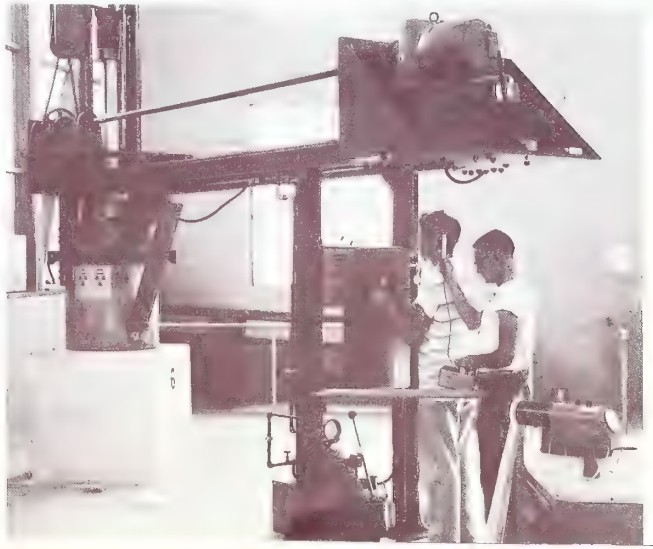
On the Virgin Islands a unique program comprises research and extension studies on agricultural and rural-life problems to establish the basis for a sound agricultural economy for those tropical islands. The unusual conditions of day length, temperature, precipitation, and humidity, as well as unusual marketing problems, in both the tropics and Alaska combine to create fascinating scientific problems. This Division utilizes some 35 professional workers in just about all the specialties of agricultural science.

Foreign Research and Technical Programs

The Foreign Research and Technical Programs Division administers the foreign research contract and grant activities for the Department of Agriculture carried out by foreign governments and scientific organizations under Public Law 480 and related legislation. The objectives of this program are (a) to develop fields of farm products research; (b) to bring about the greatest practical increase in the utilization of agricultural products; (c) to give impetus to solutions for existing problems of basic and applied research; and (d) to channel efforts of foreign scientists and research facilities for mutual economic benefit and to advance scientific knowledge. This Division is also responsible for coordinating and implementing ARS activities in the field of international economic, technical and cooperative assistance and relations, including the training in this country of foreign nationals in American methods and procedures for conducting research in the various areas of agricultural science. About 20 professional employees are engaged in the work of this Division in Washington, D.C., at Beltsville, Md., and in several foreign countries. The scientific staff consists of specialists and research administrators who have had extensive professional experience in the agricultural sciences.

Regulatory Programs

ANIMAL DISEASE ERADICATION DIVISION. This Division conducts domestic programs of inspection, quarantine, testing, diagnosis, vaccination, condemnation and disposal, disinfection, and other measures for the control and eradication of infectious, contagious, and communicable diseases of livestock and poultry. It also conducts investigations to determine the existence of diseases and carries out activities relating to the collection and dissemination of animal and poultry disease morbidity and mortality information. Its activities are nationwide in scope, are largely cooperative in nature, and are administered through about 55 field stations located throughout the continental United States and in Puerto Rico and Hawaii. About 700 professional workers are employed in this Division, practically all of whom are veterinarians.



Irradiating screwworm pupae with radioactive cobalt is the basis of a screwworm-eradication program. Flies that emerge from the pupae are sterile. These are released over infested areas. Native female flies that mate with sterile males lay infertile eggs. N-30232

ANIMAL INSPECTION AND QUARANTINE DIVISION. The primary functions of this Division are to protect the livestock and poultry industries of the United States from diseases of foreign origin, to promote foreign trade by doing all that is possible to assure that only healthy animals are exported, to assure safe and humane transportation of export livestock, and to safeguard the health of our domestic livestock by the licensing and inspection of the production of veterinary biologics. This Division is also responsible for certifying to the eligibility for free entry of purebred animals imported by U.S. citizens for breeding purposes. The work of this Division is conducted at about 80 locations throughout the country. It has approximately 70 professional workers, all of whom are veterinarians.

MEAT INSPECTION DIVISION. The major task of this Division is to assure the wholesomeness, freedom from disease, cleanliness, and informative labeling of meat and meat food products prepared under Federal supervision. Over 80 percent of all animals slaughtered commercially for food in the United States are examined by this Division. Diseased or otherwise unfit meat is destroyed. Examinations to assure compliance with specifications are performed for the military and other Federal purchasing agencies. All meat offered for sale in interstate or foreign commerce must be prepared in establishments operating under Federal inspection. Controls are also exercised over all meat exported from or imported into the United States. The Division has about 700 professional employees. Most of these are veterinarians but some are chemists and bacteriologists. The meat inspection program is administered through approximately 130 main field stations throughout the country. These stations provide service to packing plants located in more than 500 cities and towns in the continental United States and in Puerto Rico and Hawaii.

PLANT PEST CONTROL DIVISION. This Division conducts programs, largely cooperative in nature, for the control and eradication of harmful plant pests, which include both insects and diseases. It has five primary responsibilities: (1) Plant pest survey, (2) cooperative control operations, (3) regulatory operations, (4) methods improvement, and (5) pesticide regulation. The survey work includes the inspection of all stages of growing crops, including those on the range, in forest areas, and in nurseries. Stored grains, seeds, feeds, and other articles and products often are involved in this activity. The control and eradication processes include field inspections, laboratory tests and analyses, participation in fumigation treatments, aerial spraying activities, and other approved methods of detection, control, suppression, and eradication. The domestic quarantine phase of the work involves the application of regulatory procedures, which include inspection and supervision of treatments required for certification of many kinds of agricultural commodities (such as nursery stock, plants, forest trees and products, grains, and the like) and other items that are capable of carrying insect pests or plant diseases in transit. Soil, sand, stone and quarry products, and building materials, as well as highway construction and maintenance equipment, often are involved in this phase of the work. This Division administers the Insecticide, Fungicide and Rodenticide Act of 1947 and discharges the responsibilities of the Department of Agriculture pertaining to the Miller amendment to the Food, Drug and Cosmetic Act. More than 500 professional employees are utilized in the activities of this Division. Most of them are plant pest control inspectors who must have had college training in entomology, botany, plant pathology, nematology, horticulture, mycology, invertebrate zoology, or closely related subjects. The programs of this Division are administered by some 56 field stations throughout the United States and in several foreign countries, including Mexico.

PLANT QUARANTINE DIVISION. This Division is responsible for enforcing Federal plant quarantines and related regulatory orders that are designed to prevent the introduction and spread of injurious foreign plant pests that might be brought into this country with plants and plant products imported from abroad and moving from offshore possessions of the United States to the mainland. It examines incoming carriers and cargoes, baggage, and mail for restricted and prohibited materials, and inspects and treats importations of certain plant materials to prevent the entry with them of injurious plant pests. It inspects shipments of agricultural products moving interstate when regulated by Federal domestic plant quarantines, and examines and certifies for compliance with import requirements of the country of destination domestic plants and plant products moving for exportation. This Division utilizes the services of more than 400 professional employees, all of whom are plant quarantine inspectors and must have had college training in entomology, botany, plant pathology, nematology, horticulture, mycology, invertebrate zoology, or closely related subjects. The activities of this Division are carried out at almost 60 field locations at principal ports of entry, at several inland traffic centers, and in Hawaii, Puerto Rico, and the Virgin Islands. All new professional employees are appointed at New York City, where they are given a 6 months' training course; afterward they are transferred to duty stations where their services are required on a continuing basis.

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An animal quarantine inspector examines cattle being shipped by airplane. 11177-A

A Federal meat inspector examines a beef carcass to determine whether the meat is wholesome. N-17254

An airplane sprays insecticide over rugged rangeland during a campaign against grasshoppers in the Western States. BN-6520

A plant quarantine inspector prepares to board a ship. He will inspect the cargo to make sure that no plant pests are being brought into the United States. N-22953

PIONEERING RESEARCH

Scientific facts and principles are the starting points for the imaginative processes that lead to new things and new ways of doing things. The thinking, observation, experimentation, and analysis that are done to establish these facts and principles may be called basic research.

Both basic and applied research have been and will continue to be interwoven in all of our regular research activities that are directed toward helping agriculture perform its role by solving current problems, anticipating and averting future problems, and creating new and better things for and from agriculture. But we have come to realize that something more than this is required to improve our chances of solving agricultural problems and of creating new ways to exercise control over agricultural phenomena. The realization pointed to the need for agricultural research that is aimed at the advancement of science, rather than at specific, practical problems or objectives.

In 1957 provision was made in ARS for establishing organizational units within the various research program divisions that would permit increased emphasis on pioneering research. These units are known as pioneering research laboratories. Their research is undertaken to discover the principles underlying research areas and to develop theory that will facilitate problem research as needs arise. It is expected to build a foundation for the quick, effective, and economical solution of research problems and provide means for the recognition of basic research scientists for their research achievement and potential. These laboratories give the scientist the freedom he needs to follow where the research trail leads and find the unlooked for. They are places where some of our scientists with special aptitudes for basic research can work in an atmosphere exceptionally conducive to the intensive exploration of the frontiers of agricultural science.

The 14 pioneering research laboratories in ARS, together with the names of the program divisions in which they are established, are as follows:

ANIMAL HUSBANDRY RESEARCH DIVISION: Pioneering Research Laboratory in Basic Animal Genetics; Blood Antigen Pioneering Research Laboratory.

CROPS RESEARCH DIVISION: Pioneering Research Laboratory for Plant Virology; Plant Physiology Pioneering Research Laboratory.

EASTERN UTILIZATION RESEARCH AND DEVELOPMENT DIVISION: Pioneering Research Laboratory for Investigations of Allergens in Agricultural Products; Pioneering Research Laboratory for Investigations on the Chemistry of Animal Proteins.

The Chief Scientist of the Mineral Nutrition Pioneering Research Laboratory studies a chromatograph negative of barley root extract. N-23931

ENTOMOLOGY RESEARCH DIVISION: Pioneering Research Laboratory for Insect Pathology; Pioneering Research Laboratory for Insect Physiology.

HUMAN NUTRITION RESEARCH DIVISION: Pioneering Research Laboratory in Cellular Metabolism.

NORTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIVISION: Pioneering Laboratory for Microbiological Chemistry.

SOIL AND WATER CONSERVATION RESEARCH DIVISION: Mineral Nutrition Pioneering Research Laboratory.

SOUTHERN UTILIZATION RESEARCH AND DEVELOPMENT DIVISION: Seed Protein Pioneering Research Laboratory; Plant Fibers Pioneering Research Laboratory.

WESTERN UTILIZATION RESEARCH AND DEVELOPMENT DIVISION: Plant Enzyme Pioneering Research Laboratory.

Utmost care is exercised in the assignment of personnel to these laboratories. The leaders are scientists who have made substantial contributions in basic research and are eminent in their fields of work, or younger scientists with great capacity and promise and dedicated to basic research. Coworkers are selected on the basis of research training and ability as creative and productive research workers.

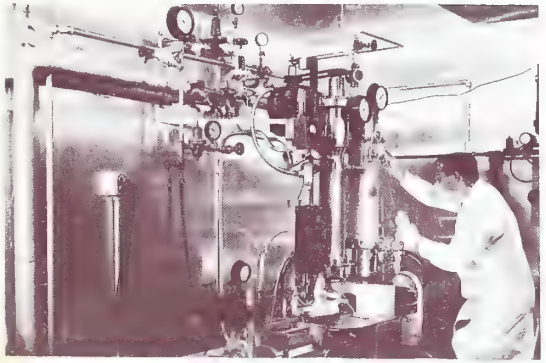
RESEARCH ENVIRONMENT AND FACILITIES

Most of our research is conducted in an environment that is particularly favorable to scientific study and exploration. Much of it is done in large, modern, specially designed, and well-equipped laboratories and greenhouses. Well-developed experimental lands, animal barns and shelters, and special-purpose buildings, structures, facilities, and equipment are provided for research purposes in a large number of locations throughout the country. A high proportion of it is located at or near educational and cultural centers; this is due to the fact that so much of our research is conducted at State universities and State agricultural experiment stations as a joint cooperative effort with them. In those instances where the research is carried out in a metropolitan area, it is usually located in an outlying suburb with ample parking space and other conveniences.

To the maximum extent feasible, ARS scientists are provided with supporting personnel, services, and facilities to aid them in their work and to conserve their time for the pursuit of research. The administrative staff is sympathetic and responsive to the needs of the research workers. The scientists have at their disposal excellent scientific and technical libraries. They have access to material from the Department of Agriculture Library, probably the largest agricultural library in the world. It contains more than 1 million volumes on agricultural and related sciences, technology, and economics, and receives about 23,000 periodicals and serial publications each year.

Main building of the Eastern Utilization Research and Development Division, Wyndmoor, Pa. BN-7031x

This laboratory equipment for making juice powders from noncitrus fruits was developed by scientists at the Eastern Utilization Research and Development Division. N-19594



Salinity Laboratory
Riverside, Calif.

USDA Research Laboratory
Winter Haven, Fla.

U. S. Horticulture Station
Orlando, Fla.

The achievements of agricultural science—to which scientists of ARS programs have contributed their full share—during the past two decades have been both many and important. They constitute an illustrious chapter in the history of the progress of this country.

Our farmers are producing 40 percent more from about the same acreage they had in 1939. Figures on manpower required to do the job also are significant. In World War I, our farm commodities were produced by 13½ million workers; in World War II, by 10½ million workers. There were only 7½ million farmworkers in 1957.

The efforts of our agricultural scientists underlie much of this spectacular progress. Their research has changed the face of American agriculture.

Seventy percent of the crop varieties grown in the United States were unknown 20 years ago. Plant scientists have consistently improved the quality and increased the yield of our crops; they have made them more adaptable to mechanized production and better able to withstand the hazards of pests and weather. Basic to the breeding and improvement of plants has been an active program of introducing new germ plasm into our crops from plants collected from all parts of the world. This has played a very important part in furnishing the characteristics of new varieties developed by our plant breeders. Other plants introduced have furnished entirely new crops for the United States; an example is the soybean, which is a multimillion-dollar crop.

Our animal scientists have made similar progress in improving the quality and production of livestock. They have given us the Beltsville turkey, the meat-type hog, the modern broiler, and hybrid lambs.

And beyond these improved crops and animals, our agricultural scientists have given us such bonuses as the aerosol "bomb," frozen fruit juice concentrates, a blood-plasma substitute, and commercial methods for making penicillin cheaply. Their studies of food have contributed materially to human nutrition.

Perhaps the contributions of ARS scientists to these gains can best be understood by mentioning typical awards and honors that have been bestowed upon a few of them in recognition of their accomplishments.

The President's Award for Distinguished Civilian Service, the highest honor the United States can bestow upon career civilian employees, is given to five civilian career employees each year. In 1958, the first year the awards were made, Dr. Sterling B. Hendricks, Chief Scientist of our Mineral Nutrition Pioneering Research Laboratory, was one of the recipients. The citation accompanying this award to Dr. Hendricks reads:

His extraordinary and versatile achievements through basic research in the Department of Agriculture are internationally recognized, particularly with reference to nutritional problems relating to soils and plants. By his outstanding discoveries which have enabled humanity to make significant progress in its struggle against hunger and the wastage of soil, water, and plant resources, he is truly a benefactor of mankind.

In 1959, Dr. Hazel K. Stiebeling, Director of the ARS Institute of Home Economics, was one of the recipients. The citation accompanying this award to Dr. Stiebeling reads:

During her distinguished career she has made lasting contributions to the science of human nutrition. The translation of her vast scientific knowledge into practical dietary guides has improved the health of all Americans. Through her leadership of international conferences on nutrition she has contributed to the well-being of people throughout the free world.

DR. STERLING B. HENDRICKS RECEIVES THE AWARD FOR DISTINGUISHED CIVILIAN SERVICE FROM PRESIDENT EISENHOWER.

During the 19 years that the Borden Award in the Chemistry of Milk has been given, seven recipients of the award have been ARS scientists.

Other awards and honors bestowed upon our scientists include the following:

Cyrus Hall McCormick Medal for exceptional and meritorious engineering achievement in agriculture.

Elvin Charles Stakman Award for outstanding contributions to research in cereal diseases.

Crop Science Award for notable contributions to research in agronomy.

Rockefeller Award for outstanding public service.

Hillebrand Prize Award for fundamental investigations on oilseed allergens and another for work on the structure of rotenone.

Citation of Honor from National Dairy Council for distinguished leadership in nutrition research and education.

John Scott Award in recognition of work in developing coastal Bermudagrass.

Hoblitzelle Award in recognition of contributions to the development of hybrid sorghum.

Modern Pioneer Award for achievements in science.

John Deere Medal for research in hydrology.

Edward Longstreth Medal for research on soil fertility.

Award from Society of American Florists for research on the aerosol method of applying insecticides in greenhouses.

Vaughan Research Award for outstanding plant research.

Medal for Merit, Typhus Commission Medal, and Medal for Service in the Cause of Freedom for research leading to effective methods of controlling insects that transmit malaria and typhus and other diseases of man.

This list of awards and honors, which is by no means complete, is intended to indicate the caliber of scientists associated with ARS and the value of the contributions they have made and are making toward the betterment of American agriculture.

PRESIDENT EISENHOWER PRESENTS THE AWARD FOR DISTINGUISHED CIVILIAN SERVICE TO DR. HAZEL K. STIEBELING, DIRECTOR OF THE ARS INSTITUTE OF HOME ECONOMICS. DR. STIEBELING IS THE FIRST WOMAN TO RECEIVE THIS GOLD-MEDAL AWARD.

LOOKING AHEAD IN RESEARCH

In agricultural research we cannot be content with past accomplishments or occupy ourselves exclusively with the problems of today. With our dynamic agriculture and ever-changing social, economic, and population patterns, we must constantly look ahead and be prepared to meet the challenges of tomorrow.

We may have to increase farm output 35 to 45 percent above 1957 levels to meet projected demand in 1975.

Indications are that we will be able to meet the expanding need for food and fiber. But to do it, we must find ways to improve production efficiency still further. Present research suggests that we are going to find them. This will reduce a farmer's risk, improve his opportunities, and make him less vulnerable on price declines. The most important possibilities seem to lie in raising the output per acre and animal. Utilizing our foods better and preventing crop losses before and after harvest are other possibilities. The attainment of these objectives depends largely on a vigorous, imaginative research effort involving both basic and applied investigations.

We must also broaden our scientific horizons to meet the challenges of the space age. This brings us to you and where you fit in. These challenges of tomorrow must be met and overcome by young scientists of today who have the required imagination, energy, technical training, and research know-how. If you possess these attributes, consider the possibility of advancing with science in ARS.

EMPLOYMENT OPPORTUNITIES

The diversified program activities of ARS and the wide range of scientific specialties needed to carry them out present unusually broad employment opportunities for capable young people who are professionally trained in the agricultural sciences. Openings at any given time vary with the different specialties and are influenced by several factors. Some idea of employment possibilities can be gained by studying table 1, which shows the number of professional employees in 35 scientific categories.

TABLE 1.—Number of Professional Employees in ARS by Scientific Categories (January 1961)

Scientific Category	*Number of Employees*
Agronomy	252
Animal, dairy and poultry husbandry	85
Animal physiology	7
Bacteriology	90
Biology	54
Botany	14
Chemistry	822
Education and training	4
Engineering (various fields)	332
Entomology	311
General agriculture	4
General agricultural administration	218
Genetics	68
Home economics	85
Horticulture	73
Industrial commodity analysis	4
Microanalysis	4
Microbiology	12
Mycology	6
Nematology	25
Parasitology	46
Pharmacology	7
Physical science administration	35
Physics	36
Plant pathology	159
Plant pest control inspection	491
Plant physiology	97
Plant quarantine inspection	421
Plant taxonomy	6
Range management	22
Soil science	187
Statistics	19
Technology (various fields)	68
Veterinary medicine	1,427
Total	5,591

The bachelor of science degree, with major course work as outlined in the preceding description of work programs of the Plant Pest Control Division and the Plant Quarantine Division, will qualify for employment as plant pest control inspectors and plant quarantine inspectors. The degree of doctor of veterinary medicine will qualify for employment in a veterinary capacity with the regulatory livestock divisions. Because of the complexity of modern research, ARS places special emphasis on the recruitment of well-qualified scientists with graduate training (preferably through the Ph. D level) for assignment to its research activities. Some high-quality graduates with the bachelor's degree are employed for research work, but they are usually encouraged to pursue formal graduate training on a part-time basis or through other arrangements. Undergraduate students in many of the scientific disciplines listed in table 1 are utilized rather extensively by ARS as student trainees or student assistants for full-time summer work and in some cases for intermittent or part-time employment during the school year. Arrangements of this kind may be carried through in our research activities from the undergraduate level up until the time the individual receives his Ph. D. degree.

Most of the positions in ARS are in the competitive civil service (merit system), and entrance appointments must be made by the selection of persons who have passed appropriate Civil Service examinations. Examinations for the lower grade positions, for which persons with a bachelor's degree or undergraduate students may qualify, usually include a written test. However, examinations for positions for which persons with graduate degrees or those with degrees in veterinary medicine could qualify are usually "unassembled," which means that the applicants are rated on the basis of an evaluation of their education and experience. Announcements of Civil Service examinations are posted on bulletin boards in first- and second-class post offices throughout the country and are distributed to colleges and universities.

SALARY AND ADVANCEMENT

Most of the positions in the Federal Government are subject to the Classification Act. This means that they are classified into grades of the General Schedule (GS) according to the difficulty and responsibility of the duties. A salary range is assigned to each grade. The grades and salaries that are applicable to professional positions in ARS are given in table 2.

TABLE 2.—Annual Salary Rates, by Grades of Professional Positions in ARS as of January 1961

Grade (GS)	Salary rates within grade									
	Regular salary rates							Longevity salary rates		
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(x)	(y)	(z)
5	$4,345	$4,510	$4,675	$4,840	$5,005	$5,170	$5,335	$5,500	$5,665	$5,830
7	5,355	5,520	5,685	5,850	6,015	6,180	6,345	6,510	6,675	6,840
9	6,435	6,600	6,765	6,930	7,095	7,260	7,425	7,590	7,755	7,920
11	7,560	7,820	8,080	8,340	8,600	8,860		9,120	9,380	9,640
12	8,955	9,215	9,475	9,735	9,995	10,255		10,515	10,775	11,035
13	10,635	10,895	11,155	11,415	11,675	11,935		12,195	12,455	12,715
14	12,210	12,470	12,730	12,990	13,250	13,510		13,770	14,030	14,290
15	13,730	14,055	14,380	14,705	15,030			15,290	15,550	15,810
16	15,255	15,515	15,775	16,035	16,295					
17	16,530	16,790	17,050	17,310	17,570					
18	18,500									

High-quality college graduates with a bachelor's degree may qualify for employment in GS–7; others with a bachelor's degree qualify at the GS–5 level. The bachelor's degree plus 1 year of graduate study qualifies for GS–7. Persons with a bachelor's degree plus 2 years of graduate study qualify for employment in GS–9 research positions. Those who have received the master's degree within the past 2 years and have demonstrated superior ability in their graduate studies likewise qualify for GS–9 in research work. The Ph.D. degree meets the requirements for GS–11 research positions and those who have received this degree within the past 2 years and have demonstrated superior ability in their graduate studies qualify for GS–12 research positions. The degree of doctor of veterinary medicine will qualify for employment in GS–9. Under-graduate students pursuing a bachelor's degree may be employed as trainees in GS–3 at $3,760 per annum upon completion of their freshman or sophomore year, and in GS–4 at $4,040 per annum upon completion of their junior year. Students pursuing a degree in veterinary medicine may be employed as trainees in GS–7 at the end of their junior year in the regular veterinary medicine curriculum, which represents the completion of a minimum of 5 years of college study. For professional positions in all categories, 1 additional year of appropriate scientific experience is normally required to meet qualifications requirements for each successively higher grade level beyond that for which education alone will qualify. By special approval of the U.S. Civil Service Commission, however, plant pest control inspectors and plant quarantine inspectors may be promoted from GS–5 to GS–7 upon satisfactory completion of 6 months of training and service in ARS.

A new employee usually must be paid the beginning salary rate for his grade. Under authority contained in special legislation, the Civil Service Commission has established above-the minimum entrance salaries for certain extremely hard-to-fill categories of positions in specified grade levels.

The following list shows (1) the professional positions in ARS that are covered by this authority, and (2) the salary step that applies to each of the specified grade levels. Table 2 shows the salary that corresponds to each of the steps. (Example: The entrance salary of a GS–7 chemist position is $6,345, the amount shown in the seventh column under "Regular salary rates.")

POSITION AND GRADE	*SALARY STEP*
CHEMIST, PHYSICIST, AND ENGINEER:	
GS–5 and GS–7	SEVENTH
PHARMACOLOGIST:	
GS–7	FIFTH
GS–9 through GS–12	FOURTH
GS–13 and GS–14	THIRD

At regular intervals an employee is advanced to the higher salary rates within his grade. Within-grade salary increases occur every 52 weeks in grades GS–5 through GS–9, and every 78 weeks in GS–11 and above, until the top regular salary rate of the grade is reached. At the end of 10 years in a grade, 3 of which are at the top regular salary rate, each employee in grades up to and including GS–15 receives a longevity salary increase. He receives two more such increases at 3-year intervals.

Opportunities for advancement to the higher grade levels are excellent in all our program activities for those professional employees who demonstrate that they merit it on the basis of productivity, initiative, ability, accomplishments, and other relevant factors. Merit promotion plans, tailored to meet the varying requirements of different occupational groups and work situations, have been developed and are in operation throughout ARS. As an integral part of such plans, supervisory appraisal reports are obtained annually for all employees in order to determine quality and quantity of performance, extent of progress and growth, training needs, and qualifications for promotion. A system of committees is used to review and evaluate such reports and to identify employees best qualified for promotion.

Advancement in research is based on scientific accomplishment. In research activities professional employees may aspire to careers in research administration or may pursue their careers in the planning and conduct of research itself without assuming administrative duties—according to their interests, talents, and abilities. Those who pursue their careers in the planning and conduct of research have equal opportunities for advancement to the top salary scales. As a result of special legislation, ARS has authority to pay salaries up to $19,000 a year to a limited number of outstanding scientists.

PROFESSIONAL GROWTH AND RECOGNITION

These come about in many ways in ARS. Association with outstanding scientists, many ranking as national and international authorities in their fields, broadens your research horizon and your own capabilities. Contacts and collaboration with leaders in industry, with scholars from academic circles, and with scientists at widely known research centers assume an important role in developing our research programs and serve to stimulate professional growth. Inservice training through seminars, meetings, and other techniques is a common practice. Cooperation with scientists in other disciplines is encouraged and frequently is required. Many important contributions to science are made through joint attack on a complex problem by experts with different specialities.

Thousands of visitors from the United States and most foreign countries annually visit our larger laboratories. Since many of them are eminent scientists, their visits present an opportunity for exchange of ideas through individual or group conferences. Much of our research is conducted at or near colleges and universities. This affords an excellent opportunity for our scientists to pursue advanced studies on a part-time basis, which is encouraged. Legislation enacted in 1958 provides broader training authority than that previously available to ARS, and is being used extensively to expand both the inservice and outservice training of our professional people.

In ARS you will have maximum opportunity for individual professional recognition. Your original research accomplishments will be fully published with authorship credit. You will have competent assistance from our staff of editorial and information specialists. Presentation of papers, attendance at scientific and technical meetings, and participation in pertinent professional society activities are encouraged. Contributions to the scientific literature also include writing books, specialty chapters or articles for standard reference works, and monographs. These activities enhance or aid attainment of professional stature and enable you to develop leadership in your field. You may receive cash awards for sustained superior performance and for money-saving suggestions. The Department of Agriculture also gives Superior and Distinguished Service Awards for outstanding and exemplary services and contributions.

HOURS OF DUTY

The regular workweek in the Federal civil service is 40 hours. This usually consists of 8 hours a day, from Monday through Friday. If you are required to work extra hours, you receive additional pay or compensatory time off.

Employees are given eight national holidays each year: New Year's Day, Washington's Birthday, Decoration Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, and Christmas. When any of these falls on Saturday or Sunday, the holiday is observed on the preceding Friday or the following Monday.

FEDERAL EMPLOYEES GROUP HEALTH INSURANCE

As a result of new legislation effective July 1, 1960, several group health insurance plans are available to all full-time nontemporary employees of ARS at low cost. The variety of plans offered fall into two types: (1) The Service Benefit Plan which includes hospital and surgical benefits, and related in-hospital benefits, and (2) the Indemnity Benefit Plan which includes, in addition to the benefits described above, outpatient and clinical care and treatment, and prescribed drugs, medicines and prosthetic devices. The cost of insurance depends on the type of plan selected and the coverage desired. The Federal Government pays half of the cost of the group health insurance for plans costing up to $13.50 per month. The remainder of the cost is collected through payroll deduction from the salary of each employee electing to participate in this program.

LEAVE PRIVILEGES

Leave privileges are designed to maintain at a high level the health, efficiency, and morale of employees.

ANNUAL LEAVE. Each year, employees earn annual leave, for vacation and other purposes, as follows: Those with less than 3 years of service, 13 days; those with 3 to 15 years, 20 days; those with 15 years or more, 26 days. Annual leave may be taken in units of one or more hours. Any that is not used in a year may be accumulated up to a limit of 30 days. If an employee leaves Government service he is paid a lump sum for the amount of his accumulated annual leave.

SICK LEAVE. Each year, you will earn 13 days of sick leave, for use in case of serious illness and for appointments with a doctor, dentist, or optician. Unused sick leave accumulates without limit and provides employees financial protection for periods of prolonged illness.

MILITARY LEAVE. If you are a member of the National Guard or of the Reserves of the Army, Air Force, or Navy, you are entitled to military leave for training or other active military duty. A maximum of 15 calendar days is allowed each year with full pay and without charge against annual leave.

EDUCATIONAL LEAVE. You may be granted leave without pay for full-time graduate work or other advanced study related to your duties, provided you intend to return to your job. This type of leave helps employees to enhance their scientific knowledge, improve their job performance, and increase their opportunities for advancement within ARS.

MEDICAL AND COMPENSATION BENEFITS

A service-connected illness or injury entitles an employee to medical attention, hospitalization, and compensation. These benefits cost you nothing. The compensation payment is about two-thirds of an employee's salary. At the employee's request, it may replace sick leave at any time after the third day of absence from duty.

GROUP LIFE INSURANCE

Life insurance is available at low cost to full-time employes in ARS. No action need be taken by an employee to get the insurance. No medical examination is required.

The amount of insurance depends on the employee's basic salary and is computed in multiples of $1,000. For example, an employee whose annual salary is in the range of $7,001 to $8,000, inclusive, is insured for $8,000. You pay 25 cents each payday for each $1,000 of insurance. The premium is deducted from your pay. The Federal Government contributes half as much as employees.

This insurance is not mandatory, but most employees take advantage of it to help provide economic security for their families.

RETIREMENT SYSTEM

The Federal civil-service retirement system is sound and attractive. It is one of the outstanding advantages of Federal employment.

Some of the highlights of the retirement system are summarized below:

1. You may retire on full annuity at any time after the age of 60, provided you have had 30 or more years of service.
2. You may retire on reduced annuity at any time between age 55 and 60, after 30 or more years of service. The reduction in annuity is about 1 percent for each year under the age of 60. For example, if you retire at the age of 55 you would receive about 95 percent (a reduction of about 5 percent) of the full annuity.
3. You may retire on full annuity at any time after the age of 62, provided you have had 5 or more years of service.
4. You may retire on an annuity (as described below) regardless of age after 5 years or more of service, if you become totally disabled for useful and efficient service.
5. You must retire at age 70 after 15 or more years of service, and you will receive full annuity.
6. If you leave Federal Government service after 5 years and before becoming eligible for retirement, you will be entitled to an annuity

when you reach the age of 62. You may elect to receive a refund of your retirement deductions and accrued interest in lieu of a future annuity. If you leave before completing 5 years of service, you will receive the refund, since you will not be eligible for a future annuity.

7. The amount of annuity, except for disability retirement, is computed by taking the following percentages of the average salary for the five highest consecutive years, multiplying the results by the number of years of service indicated below, and adding the totals so obtained:

1½ percent of average salary multiplied by first 5 years of service.

1¾ percent of average salary multiplied by next 5 years of service.

2 percent of average salary multiplied by all remaining years of service.

In no case may the annuity exceed 80 percent of the average salary. Table 3 shows the amount of annuity that you can receive under this formula; the amount depends on your average salary and number of years of service. In case of disability retirement, the minimum annuity payable is the lesser of the following: (1) 40 percent of average salary for the five highest consecutive years, or (2) the amount of annuity (as computed under the general formula given above) that the employee would have received at age 60 had he remained in the service until then. An annuity larger than the minimum for disability retirement is payable if it has been actually earned by the employee in accordance with the general formula given above.

8. If an employee dies after he has completed 5 years of service or more, his widow and/or dependent children are eligible for annuity benefits. If he leaves no widow or dependent children, the refund consisting of his retirement deductions and accrued interest is paid to his designated beneficiary.

TABLE 3.—Amounts of Annuity Receivable (at age 60 or over) by Salary and Years of Service

Highest 5-year average salary	Amount of annuity receivable after specified years of service		
	30	40	45
$7,000	$3,937	$5,337	$5,600
$8,000	4,500	6,100	6,400
$9,000	5,062	6,862	7,200
$10,000	5,625	7,625	8,000
$11,000	6,187	8,387	8,800
$12,000	6,750	9,150	9,600

9. Employees and the Government contribute jointly to the retirement fund. Your share would be 6½ percent of your salary; this amount is automatically deducted from each pay.

This information gives you an idea of the advantages of the Federal retirement system. The deductions are an excellent investment; you may understand this better by comparing them with the cost of annuities of standard insurance firms. The retirement plan assures you a regular income for yourself and your family during the later years of life. Think carefully about its benefits in deciding where to pursue your career.

WHERE TO GET ADDITIONAL INFORMATION

As a part of its recruitment program for scientists, ARS maintains a network of college recruitment representatives—who themselves are scientists—located at or near the campuses of the various land-grant colleges and universities. Periodically these representatives are furnished lists of scientific vacancies in ARS. They also have appropriate Civil Service examination announcements and application forms, and are otherwise prepared to assist well-qualified agricultural scientists who are interested in becoming associated with ARS.

If you desire additional information regarding employment possibilities and live in the vicinity of one of these recruitment representatives, you are invited to visit him for a personal discussion. The names and addresses of our college recruitment representatives are given below in alphabetical order, by States. The list is correct as of January 1961.

Dr. Dale A. Porter
Regional Animal Disease Laboratory
Auburn, Ala.

Dr. Stanley M. Alcorn
Stadium Building
University of Arizona
Tucson, Ariz.

Mr. Troy Mullins
Department of Rural Economics
University of Arkansas
Fayetteville, Ark.

Dr. Douglas D. Caton
Department of Agricultural Economics
University of California
Davis, Calif.

Mr. Donald R. Cornelius
Forest and Range Experiment Station
333 Forestry Building
Berkeley, Calif.

Mr. Harry G. Sitler
Economics Department
Colorado State University
Fort Collins, Colo.

Dr. Russell A. Hyre
Department of Plant Pathology
University of Delaware
Newark, Del.

Dr. Kuell Hinson
Plant Pathology Department
Agricultural Experiment Station
Gainesville, Fla.

Mr. Joseph W. Simons
Department of Agricultural Engineering
University of Georgia
Athens, Ga.

Dr. L. F. Steiner
c/o University of Hawaii
Agricultural Experiment Station
Honolulu, Hawaii

Mr. James Esmay
Department of Agricultural Economics
University of Idaho
Moscow, Idaho

Mr. Jackson L. Cartter
160 Davenport Hall
U.S. Regional Soybean Laboratory
Urbana, Ill.

Mr. Melvin R. Janssen
Department of Agricultural Economics
Agricultural Experiment Station Annex
Lafayette, Ind.

Dr. Thomas A. Brindley
Zoological and Entomological Department
Iowa State University
Ames, Iowa

Mr. Karl F. Finney
Hard Winter Wheat Quality Laboratory
Kansas State University
Manhattan, Kans.

Dr. William A. Kendall
Department of Agriculture
Agricultural Experiment Station
Lexington, Ky.

Mr. Irwin L. Saveson
Agricultural Engineering Building
Louisiana State University
Baton Rouge, La.

Mr. W. A. Shands
Holmes Hall
University of Maine
Orono, Maine

Mr. Harold W. Hobbs
Hydrologic Investigations
University of Maryland
College Park, Md.

Mr. John R. Garrett
Contact Representative for University of Rhode Island
Room 710, U.S. Appraisers Store
408 Atlantic Avenue
Boston, Mass.

Mr. Berley Winton
Regional Poultry Research Laboratory
Agricultural Research Service
East Lansing, Mich.

Dr. Elmer R. Ausemus
Agronomy and Plant Genetics
University Farm
St. Paul, Minn.

Mr. R. A. Blanchard
Biology Building
Mississippi State College
State College, Miss.

Mr. John F. Thornton
Agricultural Engineering Building
University of Missouri
Columbia, Mo.

Mr. Frank T. Cowan
Laboratory, Entomology Research Division
Montana State College Campus
Bozeman, Mont.

Mr. J. G. Sutherland
Department of Agricultural Economics
North Carolina State College
Raleigh, N.C.

Mr. Stanley N. Voelker
Department of Agricultural Economics
North Dakota Agricultural College
State College Station
Fargo, N. Dak.

Dr. Virgil A. Johnson
State Agricultural Experiment Station
University of Nebraska
Lincoln, Nebr.

Dr. Oliver M. Smith
State Agricultural Experiment Station
University of Nevada
Reno, Nev.

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Mr. George E. Frick
Department of Agricultural Economics
University of New Hampshire
Durham, N.H.

Mr. Gerow D. Brill
Lipman Hall
Rutgers University
New Brunswick, N.J.

Dr. Rex W. Allen
State Agricultural Experiment Station
State College, N. Mex.

Mr. George R. Free
Bailey Hall
Cornell University
Ithaca, N.Y.

Mr. J. Robert Tompkin
Department of Agricultural Economics
Ohio State University
Columbus, Ohio

Mr. K. D. Arbuthnot
Department of Entomology
Room 207, Life Science Hall
Oklahoma State University
Stillwater, Okla.

Mr. Jessee E. Harmond
Department of Agricultural Engineering
Oregon State College
Corvallis, Oreg.

Mr. Kenneth H. Myers
Department of Agricultural Economics
Pennsylvania State University
University Park, Pa.

Mr. Charles P. Butler
Department of Agricultural Economics and Rural Sociology
Clemson Agricultural College
Clemson, S.C.

Dr. Phillip B. Price
Department of Agronomy
South Dakota College of Agriculture
College Station, S. Dak.

Dr. Charles Kincaid
110 McCord Hall
University of Tennessee
Knoxville, Tenn.

Mr. Joe P. Hollingsworth
Agricultural Engineering Department
Texas A. & M. College
College Station, Tex.

Dr. J. L. Haddock
Utah Agricultural Experiment Station
Logan, Utah.

Mr. James M. Stanley
Department of Agricultural Engineering
Virginia Polytechnic Institute
Blacksburg, Va.

Mr. Joseph Bornstein
Agricultural Engineering Department
University of Vermont
Burlington, Vt.

Mr. H. B. Busdicker
455–B Holland Library
Washington State University
Pullman, Wash.

Dr. Russell H. Larson
206 Horticulture Building
University of Wisconsin
Madison, Wis.

Mr. F. Leonard Timmons
Agronomy Department
University of Wyoming
Laramie, Wyo.

Should it not be practicable for you to visit a recruitment representative, you may get additional information by writing to the Personnel Division, Agricultural Research Service, Department of Agriculture, Washington 25, D.C., or to one of the regional offices listed below. If you write to a regional office, it is suggested that you write to the one that serves the State in which you live.

Eastern Regional Business Office
Agricultural Research Service
Fort Washington, Pa.

- States served: Maine, New Hampshire, Vermont, Rhode Island, Massachusetts, Connecticut, New York, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, Kentucky, Ohio, Indiana, Michigan.

Southern Regional Busines Office
Agricultural Research Service
Lowich Building
2026 St. Charles Avenue
New Orleans 13, La.

- States served: North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Louisiana, Arkansas, Oklahoma, Texas.

Northern Regional Business Office
Agricultural Research Service
35 South Fifth Street
Minneapolis, Minn.

- States served: Minnesota, Wisconsin, Illinois, Missouri, Iowa, North Dakota, South Dakota, Nebraska, Kansas, Alaska.

Western Regional Business Office
Agricultural Research Service
1960 Addison Street
Berkeley 4, Calif.

- States served: California, Oregon, Washington, Idaho, Montana, Wyoming, Utah, Nevada, Arizona, New Mexico, Colorado, Hawaii

Growth Through Agricultural Progress

"Breakthrough," a motion picture depicting some of the challenging activities in which ARS scientists are engaged, is available from Motion Picture Services, U.S. Department of Agriculture, Washington 25, D.C. (Color; released 1960; 27½ minutes.)